

# Teaching and Learning Amidst Double Disaster: A Case of Post-Traumatic Events among Students

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**Abstract:** This study aims to investigate the challenges faced by these affected individuals, factors that motivate the students' return to school following the disaster and their ways of dealing with the challenges regarding teaching and learning. The year 2020 and 2021 witnessed how the world had to deal with the unprecedented educational circumstance prompted by a global pandemic. The swift change to online learning was stressful and taxing in many ways, for both students and teachers, affecting their physical and mental health. With the combination of pandemic and natural disasters, the distress caused by these successive events may have become a hindrance to students' deep involvement in learning and the whole teaching and learning process. The study adopted a qualitative approach using an online survey, and 409 participants were selected from stratified random sampling. A questionnaire was administered to obtain quantitative data which were analysed using descriptive statistics. Results showed that the double disaster heightened the level of stress, causing academic, behavioural, and financial pressure to increase among these students. However, financial constraint also turns out to be one of the prominent factors that restored their motivation to return to school or college. Among the dominant coping strategies employed by the students were prioritizing human interactions, positive reframing, and religious coping.

**Keywords:** Global Pandemic, Natural Disasters, COVID-19, Post-Traumatic Events, Teaching And Learning

## 1. Introduction

The Covid-19 pandemic has resulted in school and all educational institution closures across the world and posed challenges to the teaching and learning processes, causing schools to take unprecedented measures in sustaining the education system (Chiu, Lin, & Lonka, 2021). Amid the

pandemic in Malaysia, many individuals were devastated by another misfortune caused by climate change. These humanitarian emergencies, or best termed as “double disaster”, involve a combination of pandemics, natural disasters, and man-made crises, presenting a significant challenge for the overall welfare of individuals and communities alike (Cueto & Agaton, 2021). The emotional reactions accumulated from the environmental distress and worry due to the catastrophic events may exacerbate human health risks. The deteriorating climate system may trigger symptoms of stress related to the environmental crisis. Clayton (2017) shared that major acute mental health impacts include increases in trauma and shock, posttraumatic stress disorder (PTSD), compounded stress, anxiety, substance abuse, and depression. Additionally, major chronic mental health impacts include higher rates of aggression and violence, more mental health emergencies, an increased sense of helplessness, hopelessness, or fatalism, and intense feelings of loss. The surge in absenteeism and dropouts caused by Covid-19 is also prevalent. South Africa’s Basic Education Minister Angie Motshekga reported that approximately 300,000 students were missing from public primary schools after they reopened in November 2020 (Timm, 2021). These absentees are expected to be dropouts by education experts. A survey conducted by Nathwani, Shoaib, Shafi, Furukawa and Nguyen (2021) prior to school re-openings in the US discovered that school attendance was largely affected by socioeconomic factors. Students from lower income areas faced difficulties attending class in person considering the inability of these overcrowded and underfunded schools to practice social distancing and maintain preventive precautions.

In Malaysia, the former Education Minister Radzi Jidin reported that there was a slight increase in the dropout rates among learners at primary and secondary levels since the start of Covid-19 pandemic, recording a 0.01 percent increase from the previous year (Hazim, 2020). In addition, the Education Minister Datuk Dr Mah Hong Soon shared that the country recorded a total of 21,316 school dropouts from March 2020 until July 2021. Australia recorded a big fall in tertiary enrolments following Covid-19 pandemic, with women dominating the list (Dumlao, 2020). The sharp decline in female enrolments was attributed to caring responsibilities. It was impossible for these women, especially those over the age of 25 to juggle caring roles and study (Tekkol, 2020). This seems to correlate with findings from Basnet (2020), which revealed that female students in Nepal were mostly absent when schools reopened after the massive earthquake in 2015. These girls cited helping with chores and clearing up their demolished home to be the main reasons of them missing from school. Even though this happened prior to the global pandemic, it serves as an indicator that humanitarian emergencies like Covid-19 and variations of climate crisis will compound further damage to schooling if no decisive action is pursued. Therefore, the objectives of this research are to identify challenges faced by these affected individuals, factors that motivate the students’ return to school following the disaster and their ways of dealing with the challenges regarding teaching and learning.

The Covid-19 pandemic has greatly impacted teaching and learning. The sudden shift from traditional classrooms to remote learning has been a challenging process for institutions around the world especially when it comes to engaging the students and encouraging them to take part in online lessons (Xhaferri & Xhaferri, 2022). Due to the nature of the online learning environment that typically relies on intrinsic motivation and the associated characteristics of curiosity and self-regulation to promote engagement in the classroom, learners are often required to be more intrinsically motivated (Martens, Gulikers, & Bastiaens, 2004). However, learners may easily feel demotivated in the classroom because of aggregated stress and anxiety from the pandemic (Pekrun et al., as cited in Chiu, Lin, & Lonka, 2021) As a result, it hampers the learning process. In several countries, it has been a real challenge to combat the spread of Covid-19 as it was exacerbated by natural calamities. It was found that these co-existing situations affected the well-being of both individuals and communities because natural disaster complicate the existing constraints created by the pandemic (Cueto & Agaton, 2021). However, most of the research related to natural disasters were mostly focused on the means of alleviating the rising levels of climate crisis, as well as the technology and approaches taken to reduce the factors that contributed to climate change. Despite the prevalence of psychological issues surrounding traumatic events, challenges and the motivation sustainment in classrooms post-disaster are less documented in literature Hence, this study aims to address the following questions:

1) What are the challenges faced by students who experienced traumatic events?

- 2) What are the enabling factors of students' return to school post-traumatic events?
- 3) How do the students cope with the distress caused by traumatic events?

## 2. Methodology

This research adopted the quantitative methodology by using an online survey. The questionnaire consisted of demographic characteristics, open-ended questions concerning the challenges and factors that motivate them to return to school, and open-ended questions pertaining to strategies that students employ to overcome distress caused by traumatic events. There are a total of 409 respondents participated in this study. These respondents were selected using stratified sampling. These data then were keyed in and analysed using descriptive statistics.

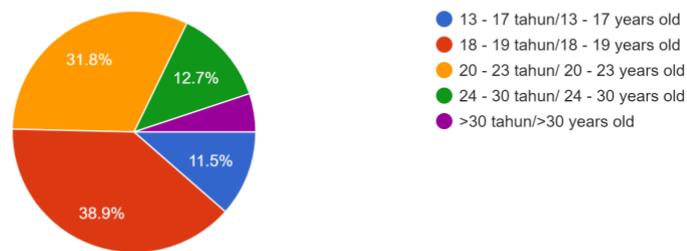
**Table 1.** Research Design Matrix

Sample	No. of sample (N409)	Sampling Method	Research Method	Data analysis
Secondary School Students	51	Stratified sampling	Online Survey	Descriptive statistics
Form Six college Students	110			
Matriculation and Diploma Students	44			
Degree Students	183			
Postgraduate (Master & PhD) Students	21			

## 3. Findings and Discussion

### 3.1 Demographic Profile

Umur Age  
409 responses



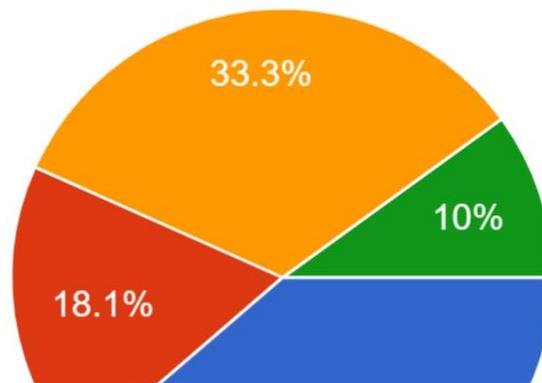
**Fig. 1** Analysis of Age

Jantina Gender  
409 responses

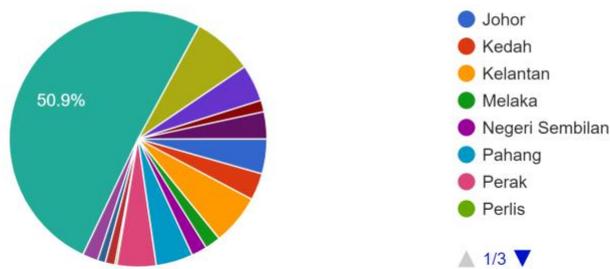


Adakah kedua ibu-bapa anda bekerja? Are both your parents working?  
409 responses

Negeri  
409 re

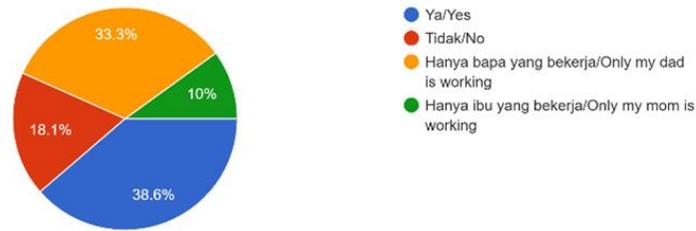


Negeri State  
409 responses



**Fig. 4** Analysis of Residing State

Adakah kedua ibu-bapa anda bekerja? Are both your parents working?  
409 responses

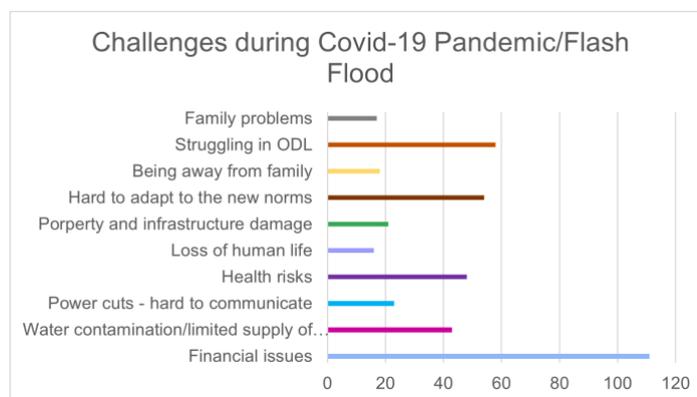


**Fig. 5** Analysis of Parents' Working Status

Figure 1 until Figure 5 show the demographic data of the respondents. 159 respondents (38.9%) were students of age 18-19 years old, followed by 130 respondents (31.8%), ages 20 to 23 years old. A total of 183 responses (44.7%) for undergraduate students and 110 (26.9%) responses for STPM were recorded for study status, evidently proportional to the responses for the age category. The findings also revealed that 298 out of 409 respondents (72.9%) were female students. It is also worth noting that 208 respondents (50.9%) resided in Selangor, the state that was badly affected by the flash flood in December 2021. Additionally, 158 respondents (38.6%) were reported to have working parents meanwhile 177 respondents (43.3%) claimed that only one of their parents was working.

### 3.2 Challenges faced by students who experienced traumatic events

Data were collected and analysed using the Statistical Package for Social Sciences (SPSS) Version 28 to answer the research questions in this study. A descriptive analysis was conducted to examine the challenges experienced by respondents during the double disaster.



**Fig. 6** Challenges Faced by Students during COVID-19 Pandemic/Flash Flood

There were 10 emerging themes found for Question 1, as shown in Figure 6. The theme with the highest frequency that is financial issues, recorded 111 responses (27.13%). Online Distance Learning (ODL) struggles is a close second with 58 respondents (14.18%), followed by transitioning to the new norms, which reported 54 respondents in total (13.2%).

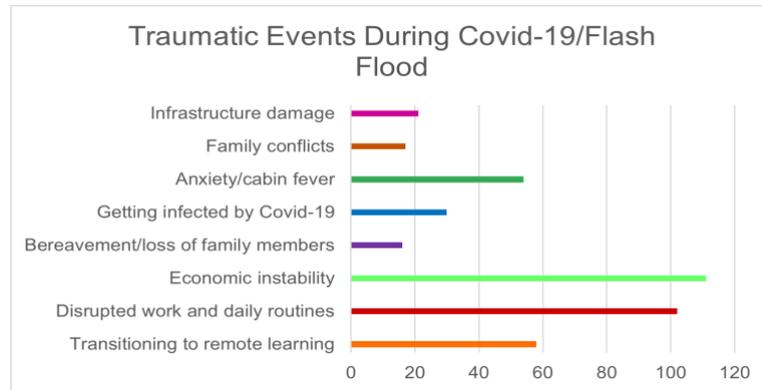
Some of the comments given by the respondents pertaining to the challenges experienced by them are:

*R13 My mom and dad got laid off*

*R56 Dad had to close business*

*R187 Challenge to adapt with the new learning method as my house was not conducive*

- R400 It's so hard to discuss with group members
- R16 Work from home, no access to go to office
- R91 Making sure everything is sanitised before entering home – including groceries

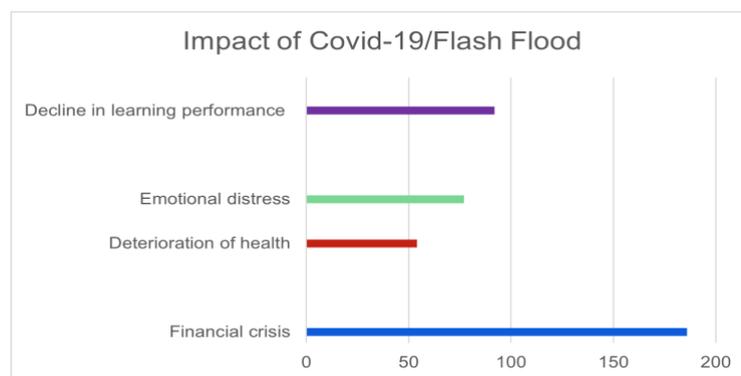


**Fig. 7** Traumatic Events during COVID-19/Flash Flood

For Question 2, 7 emerging themes were gathered. The respondents were asked about the traumatic event they had to deal with in the wake of the double disaster. Economic instability recorded the highest number of respondents, with 111 responses (27.14%). 102 respondents (24.93%) claimed that their work and daily routines were disrupted when the country was hit by the global pandemic and flash flood. Transitioning to remote learning recorded the third highest answer with 58 respondents (14.18%).

Some of the comments given by respondents:

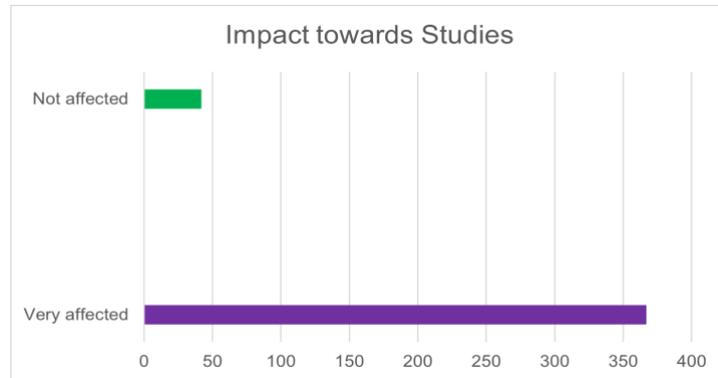
- R118 Lost my job during the Covid-19 outbreak
- R53 Spent a lot on buying data for school purposes
- R17 Everyone is trapped in their homes due to flood
- R27 Business, administrative and bank operations are subject to standard procedural operations (SOPs)
- R94 Students aren't used to the sudden shift to online learning mode
- R265 The power outage during flood made it difficult for students to attend online classes



**Fig. 8** Impact of COVID-19/Flash Flood

Figure 8 shows the responses for Question 3. 186 respondents (45.5%) stated that the Covid-19 pandemic and flash flood heavily impacted them in terms of financial. In addition, 92 respondents (22.5%) reported a decline in their learning performance following the two events. The remaining responses gathered were emotional distress and deterioration of health, with 77 respondents (18.8%) and 54 respondents (13.2%) recorded respectively. Among the responses gathered were:

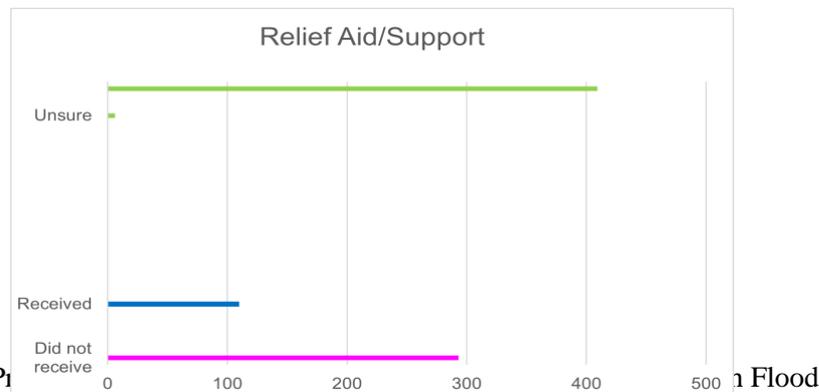
- R21 It's so difficult to save money
- R28 Costs are rising for everything post Covid-19
- R151 Lost focus, disrupted sleeping schedule
- R341 Started to fall back and lost motivation to study
- R267 I have anxiety every time it's about to rain
- R70 Long-term fever



**Fig. 9** Impact of Traumatic Events towards Studies

Question 4 aims to find out if their studies were affected by the double disaster. As shown in Figure 9, 367 respondents (89.7%) agreed that their studies were highly affected meanwhile the remaining 42 respondents (10.3%) claimed otherwise.

- R95 That happening really affected my SPM years and my focus
- R281 The destruction of books and stationery during the flood required me to repurchase these school supplies
- R296 I lost the motivation to study



**Fig. 10** Pi

Figure 10 shows the responses regarding the form of support they received following the Covid-19 pandemic or flash flood. 293 respondents (71.6%) stated that they did not receive any help, meanwhile 110 respondents (26.9%) said yes to receiving help, most of which are in the form of financial aid, basic necessities, and school supplies. The remaining 6 respondents (1.5%) were unsure.

- R11 We applied for MyKasih and we received several vouchers and food
- R18 We were provided with free supply of food from the school which was sufficient for the prescribed quarantine period
- R97 Yes, I received a laptop to help me with my studies
- R117 Yes. We received smartphones and free sim cards from Yes through Yes Learn From Home program

It is evident that majority of the students were struggling with the sudden shift from traditional classrooms to remote learning. Engaging students and encouraging their participation in online lessons has been particularly difficult due to the nature of the online learning environment, which relies heavily on intrinsic motivation (Xhaferri & Xhaferri, 2022). According to a study done by Othman, Sulaiman, Mohd Najib and Wan Ismail (2022), reduced concentration, poor internet connectivity, and difficulty in comprehending the content of subjects being taught online are among the challenges depicted by Diploma in Pharmacy students at a local university. Some also reported to have gotten poor results in examinations, alluding to the decline in their learning performance following the Covid-19 outbreak and the flash flood. This corroborates the findings from Jafar, Dollah, Sakke, Mapa, Ang, Eboy, Joko, Hassan and Chong (2022) where deteriorating focus on studying and students' inability to follow e-learning were among the six major challenges found among students of higher learning institutions in Malaysia during the implementation of e-learning. The decreased focus could be attributed to the suddenly imposed social isolation during the pandemic as it may lead to cognitive inactivity, which is linked to cognitive decline (Shankar, Hamer, McMunn & Steptoe, 2013).

Moreover, students also claimed that they lost motivation to continue schooling and suffered from emotional distress. Adults who are deprived of social interactions tend to have poorer physical and mental health because they feel less connected to other people (Hawkey & Cacioppo, 2010). These results seem consistent with Leal Filho, Wall, Rayman-Bacchus, Pritchard, Lovren, Farinha, Petrovic and Balogun (2021) whose study noted that anxiety results from stress that is amplified by social isolation and other stressors such as the transitioning to online learning mode and inadequate institutional support at home. In conclusion, the social distancing measures are a catalyst that triggers anxiety and depression to individuals who perceive themselves as vulnerable to Covid-19. This is compounded by factors such as financial constraints, social isolation, and an inability to leave their homes. The limitations on social interactions can bring about mental health consequences, including panic, anxiety, grief, and depression (Ibrahim & Alexcius, 2022).

Another major challenge they had to deal with is disrupted daily routines. Similar to findings from Leal Filho et al. (2021), the vast majority of respondents confirmed that the shutdown tampered with their daily routines, as a lot of academic activities were delayed, and the lack of social interactions led to students being demotivated and heightened their anxiety. In addition, these respondents considered economic instability to be a challenge in the dual crises of the global pandemic and flash flood, especially among vulnerable groups. The natural hazards on top of the Covid-19 pandemic would aggravate an already severe situation for these groups in particular, who already suffer from poverty and rely heavily on financial or humanitarian support (Nordling, 2020). Some of them mentioned cutting down their expenses because of the financial anxiety induced by the Covid-19 pandemic. The occurrence of natural disasters and healthcare crises normally affects consumer behaviour including herd mentality, panic buying or changes in discretionary spending (Loxton et al., as cited in Trkulja & Tadic, 2021). Some parents also lost their jobs during the pandemic and the significant rate of unemployment has seen the immediate impact on household income. In March 2020, the data retrieved from the Department of Statistics Malaysia (DOSM) show that the country's unemployment rate rose to over 17%, which reflects the negative impact of the Movement Control Order (MCO) (Hakim, 2020).

### 3.3 The enabling factors of students' return to school post-traumatic events

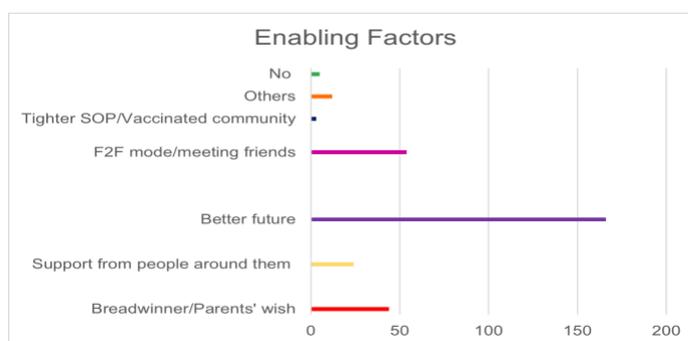


Fig. 11 Factors that Motivate Their Return to School

The respondents were also asked about the enabling factors of their return to school/college following the two events. 166 respondents (16.1%) claimed that having a better future is what drives them to return to school. 54 respondents (13.2%) were eager to meet their friends and experience face-to-face class again, and 44 respondents (10.8%) wanted to return to school because of their parents' wish. Among the comments were:

*R85 Getting a formal education is necessary to improve myself*

*R135 Motivation to be better as a member of the society*

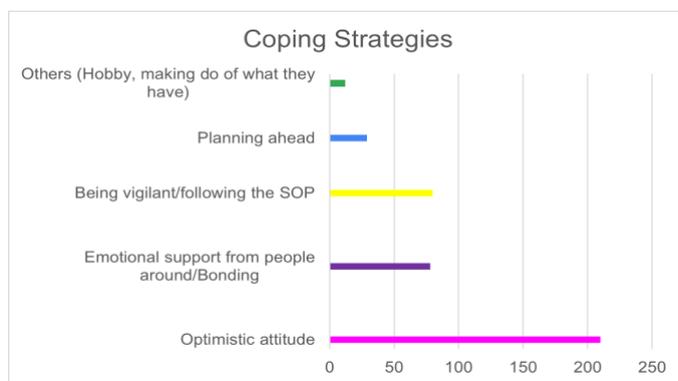
*R172 Unstable Internet connection at home*

*R385 Wanted to see my friends*

*R26 My mum really hope I finished my degree to help her ease her financial burden*

It is evident that the dream to pursue a better future is what primarily restored their motivation to come back to school after Covid-19 and the flash flood. According to a study done by Cifuentes and Martinez-Leon (2022), academic motivation is one of the prominent factors that contribute to the likelihood that students will remain enrolled and complete their studies. The second highest response demonstrated students' eagerness to reunite with their friends and experience a normal classroom again so they can reconnect and get back into schooling mindset. This is in line with previous study by Othman et al. (2022), whose data showed only a small number of students preferred ODL over classroom learning, citing that communication with lecturers and fellow students is easier via face-to-face mode. Some of the students are tasked with becoming the family's breadwinners, as seen in Figure 5.11. Their financial constraints prompted them to resume their study. However, it is in contrast with the findings of Bok (2022), where financial issue and family rationale are primarily the reasons why some students chose to postpone their academic attainment. Unwavering support from people around them is also a deciding factor in their return to school. Research from disaster recover suggests victims of Hurricane Katrina bounce back faster educationally when they receive both academic and mental health support and community connections (Sparks, 2021).

### 3.4 Strategies employed by students in dealing with the traumatic events and stress caused by the traumatic events



**Fig. 12** Coping Strategies During COVID 19/Flash Flood

Figure 12 shows the responses for Question 7. 210 respondents (51.3%) stated that having optimistic attitude is the best way to deal with those traumatic events. Complying to the SOPs enforced by the government recorded the second highest percentage with 80 respondents (19.6%), and closely followed by emotional support from the people around, with 78 respondents (19.1%).

*R119 Stay composed*

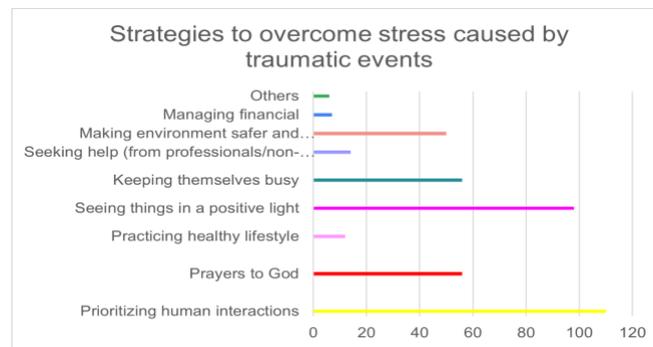
*R121 Just stay calm at home. Only chose to go thru positive info on socmed*

*R245 We take extra precautions to avoid the virus to be spread among family members.*

*R303 The whole family strictly followed the SOP to fight the pandemic*

*R163 We supported each other and supported those in need around us*

*R34 I would say connecting with friends help me to get though every day. I always talk with my friends and family to ensure that I am in a good circle.*



**Fig. 13** Strategies to Overcome Stress Caused by Traumatic Events

Figure 13 reveals the strategies employed by the respondents in coping with the stress caused by traumatic events. 110 respondents (26.9%) prioritized human interactions, 98 respondents (24.0%) tried to see things in a positive light, and 56 of them (13.7%) maintained their composure by praying to God. The same number of respondents kept themselves busy to escape from the stress.

*R248 I tried spending more time with my family rather than being alone because being alone with your thoughts could lead to horrible things. Other than that, I started to work out more so that I could gain something from being home almost all the time*

*R151 To avoid being stressed, I filled my time with doing things that enjoy indoors such as watch movies, read novels and study a little bit*

*R207 I keep a diary to jot down details of traumatic events. I also draw from time to time as both a hobby and for my studies since mine is art-based. For most part, being close to my family is enough to keep me calm and steady.*

*R315 Always be positive-minded and at the same time always strive to find something that can motivate and encourage us to overcome the problems that have plagued ourselves and our family*

*R28 I just pray to God*

As evidenced in Figure 12 and 13, the most dominant coping strategy among the respondents is positive reframing. In a study done by Verlie (2019), dreary emotions and the other emotional processes such as anxiety, frustration, overwhelm, guilt, and sadness are typical emotional reactions to climate change. Verlie (2019) further stated that a person may develop a feeling of hope for a brighter future in the face of the same uncertainty the anxiety stems from, where the person simultaneously experiences or oscillates between the two emotions. The respondents chose to approach unpleasantness in a more positive and productive way, including religious coping and keeping themselves busy. Having strong beliefs can have a positive impact on one's life by improving the quality of life, reducing the likelihood of developing emotional disorders, lowering rates of suicide, and fostering good relationships. Furthermore, beliefs promote generosity, forgiveness, and a more positive outlook on life, which in turn enhance both individual and community resilience (Goodwin & Kraft, 2022). Additionally, our findings are similar to the strategies discovered by Babicka-Wirkus, Wirkus, Stasiak, & Kozłowski. (2021), whereby acceptance, planning, and seeking emotional support are predominantly employed by Polish students to overcome the stress caused by the traumatic events.

Support seeking is instrumental in coping with the devastating aftermath. This is in line with previous study suggesting that the absence of support system can have a detrimental effect, particularly when one heavily relies on social support to cope with stress (Zurlo, Vallone & Cattaneo Della Volta, 2022). Students who typically seek help from friends, family, or partners may have

experienced significant frustration because they were unable to access these sources of support in person and had to rely solely on using technology (Papouli, Chatzifotiou & Tsairidis, 2020). The results are also consistent with findings that adolescents and adults generally opt for active coping strategies such as socialising, engaging in hobbies, and doing physical exercise (Beames, Li, Newby, Maston, Christensen & Weirner-Sedler, 2021). People who actively engage in physical activities are less likely to exhibit symptoms of depression and anxiety (De Mello, Lemos, Antunes, Bittencourt, Santos-Silva & Tufik, 2013). The social distancing measures also seem to be prominent in helping the students cope with the dual crisis. A study in China reported one group of students decided to stay at the dormitory during the epidemic, in fear of harming their family members if they go home (Wang, Pan, Wan, Tan, Xu, Ho & Ho, 2020).

#### **4. Conclusion and recommendations**

It is eminent to say that the double disaster affects students in many ways – physically, emotionally and financially. This study provides insight into the challenges the students face during COVID-19 and the flash flood, the key factors which influence their decision to go back to school, and the coping strategies they employed during these challenging times. Amid the current situation of confronting COVID-19 and natural disaster, it is crucial for countries to prioritize safeguarding the most vulnerable groups from the adverse effects of both crises. Additionally, it is essential to evaluate existing emergency plans and ensure they align with the ongoing efforts to combat COVID-19. It is not feasible for any one organization to manage such intricate risks alone, thus necessitating a comprehensive approach that involves all branches of government. Moreover, accelerated action to adapt to climate change is also required. Although there has been a gradual increase in both humanitarian initiatives and conditional transfer programs, it is crucial for governments to establish appropriate channels that can effectively deliver these aids and programs to those who are in need, especially the vulnerable groups. Not only do these groups require financial aids, but they also need adequate mental support. With how the existential fears surrounding the climate change have been worry-inducing, the eco-anxiety first aid kit is a concept that should be made known to the community. The government should advocate the tips to detach oneself from the overwhelming emotional distress caused by eco-anxiety. In fact, in the past few years, the use of asynchronous technologies has grown in various healthcare environments, and this trend has now extended to mental healthcare (Yellowlees & Shore, 2018). The increasing adoption of asynchronous tools makes it easier for the people to seek for mental support. Nepali students who were directly impacted by the massive 2015 earthquake prepared “go-bags” containing essential items and supplies such as medicines. Basnet (2020) also wrote about a credited 5-hour teacher professional development counseling programme that was conducted as an initiative to build psychological resilience among students and teachers.

For future research, we recommend doing a need analysis for developing suitable blended learning supplies and a more structured pedagogy model in an attempt to inform future intervention in teaching and learning. Teachers realized that they could not just replicate traditional classroom methods and must adapt to online learning environment for teaching and learning to take place effectively (Kearney, Schuck, Fergusson & Perry, 2022). Teachers have to be flexible and work together to adopt new practices while ensuring continuity for students. This will help illuminate ways forward in the field of teaching and learning. Another suggestion for future research would be interviewing experts pertaining to coping strategies that can help the affected in times of crises, as many still do not have an available repertoire of appropriate strategies. Since the findings revealed the students suffered a major setback in their learning process because of the double disaster, future studies can also look into exploring the potential impact of these shocks on the quality of education at all levels.

#### **5. Co-Author Contribution**

The authors affirmed that there is no conflict of interest in this article. Siti Zuraida Maaruf and Nur Shakila Izzati Rusli prepared the literature review, analysed the data and overlooked the

writeup of the whole article. Siti Hafsyah Idris and Maslinawati Mohamad wrote the research methodology and did the data entry. Fazlena Hamzah and Siti Zurina Maaruf carried out the data collection.

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